PSC Docket 06-241

Summary and review of Agency consultant's (IC's) "INTERIM REPORT ON DELMARVA POWER IRP IN RELATION TO RFP", submitted by Agency Consultant, 4 April 2007

These review comments by Willett Kempton, submitted 9 April 2007
Resubmitted with errors corrected

Summary of Consultant Report

New power will be needed for Delmarva, due to expected load growth, and retirements of existing fossil power plants (due to pollution regulations and carbon costs). Energy conservation will not be sufficient to meet this need. There are real risks of unexpected increases in fuel costs for gas and coal, insufficient supply of gas, and carbon fees, which may not be correctly modeled in the models used in Delmarva's or the IC's prior analysis. Delmarva has opposed all long-term power purchase agreements (PPAs) and has not seriously considered how PPA will reduce these risks. New generation from renewable energy offers protection from ("a hedge against") expected fossil price increases and carbon fees. In addition to the Bluewater bid, Delmarva could buy moderate-term contracts for wind built in Pennsylvania or Maryland (10 years), but probably not longer because sellers expect price increases. Regional land-based wind purchases for 10 years would be cheaper than building offshore wind in Delaware, and could be made in smaller increments. Regional fossil electric sellers would not offer long-term contracts without passing on fuel costs and carbon costs, which are an unknown risk. Rather than agreeing to a bid now, a "market test" should first be conducted by comparing the current bids against regional contracts for power. These test bids could be either all sources or renewable energy only. If the test bids were for any source of regional power, all current bids could compete, or if they were for renewable power only, only the current BWW could compete. In either case, the current bids would be competing with out of state supply.

Review and evaluation

I concur with the IC that new generation is needed and that utility-scale renewable energy offers an important hedge against risks of fuel and carbon increases. It is helpful for the IC to clearly show that conservation alone cannot meet load growth and possible generator retirements. I concur with the ICs implication, not stated directly, that wind is the only renewable energy source that is currently available in our region at large scale, implementation pace, and price to be practical to displace retiring generation or meet all new load.

However, the IC has not convincingly made the case that a new bidding process is needed to compare Delaware bids against regional suppliers. It is already known that regional land-based wind will be cheaper in the short term and come in smaller increments. The

consultant found that most regional suppliers would not be willing to provide contracts for over 10 years, and then only with a price escalation built in, because suppliers expect electricity prices and carbon fees to go up. This already validates EURSCA's premise, that Delaware should build new generation that will provide price stability for up to 25 years. But the report does not note that the survey of suppliers validates EURSCA's goal and approach. Rather the option of a 10 year only contract is given as a valid way to meet EURSCA. Although a 10 year contract is allowed by EURSCA, I do not believe 10 years should be considered "long term" protection.

Also not mentioned by the consultant, regional wind purchases will offer less health and environmental benefit than wind in the South Delaware zone, because it will have a smaller effect in turning off existing Delaware fossil generators, and no effect in reducing emissions regionally (those projects are already running). The improved health and environmental effect of wind in Delaware is due to locational pricing and transmission limitations. What new would be learned by this market test?

We can decide already whether we want to build new wind power in Delaware or buy contracts from outside. Wind in Delaware has advantages of long-term price stability, environmental and health benefits, climate change, employment, and economic development. Purchases on the regional market have the advantages of smaller power increments and lower cost per MWh during the initial years. On the larger picture of climate change, building a large offshore wind farm rather than buying contracts will more definitively reduce greenhouse gas emissions and advance the only industry in the region now known capable of very large CO_2 emissions reductions. There's not enough onshore wind in the entire Northeast to seriously reduce climate change emissions, we would just be competing with others for a limited onshore wind resource and bidding up the longer-term price.

We don't need another bidding process to determine these things. In relation to the criteria of the law (HB6 or EURCSA), the law specified that generation should be in Delaware, and the PSC rules set a 400 MW maximum contract size. Why does the IC suggest changing these rules? I infer that the reason is an overriding concern about the projected increase in SOS prices. But avoiding any price increase is not a criterion of EURSCA. EURSCA directed the agencies to favor bids that cost effectively produce "energy price stability, reductions in environmental impact, benefits of adopting new and emerging technology". The BWW bid achieves the criteria of the law.

Equally important, the only significant negative evaluation of the BWW bid is on expected price, and Delmarva SOS customers have overwhelmingly said they would prefer to have wind power, even if it means price increases greater than the projected amounts. Customer preferences have been stated in voluminous written testimony, in oral arguments at the Town Hall meetings, and in a probability sample of Delmarva customers—all on the record in this Docket. In each of these forums, SOS customers have been told they would pay more for wind energy. In fact, the actual costs to consumers has been overstated (per other submission to this docket, I believe that model assumptions have overstated the price, but even if the assumptions are correct, an

arithmetic error led the IC to estimate bill impact at twice its actual figure because it assumed 100% of power would be wind). But even at the incorrectly doubled bill impact, claimed at the public hearings and in some press reports, most members of the public have nevertheless expressed a preference for wind. Those who spoke in favor of the IGCC coal bid, although most were employees or contractors of the bidding company, nevertheless they spoke in favor of jobs, new technology, and advancing solutions to pollution and climate change; they did not speak in favor of picking Delaware's next power on the basis of price.

For all the detailed analysis in the IC report, the big picture has been lost. The in-state wind bid offers: reducing the tragic health costs of power plant pollution, doing something significant about climate change, using Delaware's own energy resources, taking the lead in a new industry, creating new jobs and businesses, making an investment, being part of creating the future. Delaware's citizens regard it with pride, of doing something positive, of considering the next generation – these sentiments are clearly expressed in public contributions to the Docket, in letters to the editor, and in many conversations in our communities. This is not just another least-cost power bid, neither by law nor by public reaction. It is a choice about our future and the future of our children. That is why there has been unprecedented public involvement—three times the number who attended for the prior rate increases. That is why, in the words of Chairwoman McRae, "There has never been a docket like this in the history of the Delaware Public Service Commission." Overwhelmingly, Delmarva SOS customers place higher value on these things than on saving $5/month on their electric bill (and even that appears to be inflated, see Kempton and Firestone submissions to the RFP docket of March 5, 2007 and March 20, 2007).

I know of not one member of the public who spoke or wrote in this docket in favor of the low-cost bid. On whose behalf would the PSC and Agencies prioritize cost over these other factors, and deny the ratepayers their stated willingness to pay, and their stated preferences for their source of power?

Benefits of adopting new and emerging technology

This docket has not really addressed HB6's criterion of benefits of "adopting new and emerging technology." Offshore wind is a gigantic resource off the entire Northeast, from Cape Cod to Cape Hatteris (330 gigawatts average output regionally, compared to 73 GW average electrical demand). It is the only currently-available renewable resource large enough to lower this region's carbon emissions enough to control climate change. None of the other bids, nor the on-land wind resource mentioned for the first time in this report, are remotely as large and thus could not control climate (although some could help). Thus, this bid has larger implications than a cent difference in our cost of power—it could help develop our country's most potent weapon against climate change, and put Delaware workers and businesses in the lead. Although these considerations have not been part of the evaluation, they are within EURSCA's mandate to evaluate based partly

on "benefits of adopting new and emerging technology", and have been expressed in one form or another by many constituencies' views of the IRP and RFP.

Appendix: QUESTIONS ANSWERED BY THIS REPORT, WITH QUOTATIONS

• Will energy conservation measures make a new long-term power purchase unnecessary?

"Regardless of how much of the DSM potential estimated by the Company is implemented, the DP&L peak load remains above the 2007 level throughout the 25-year planning horizon. Thus, the Company will still face issues of when and how to procure power supplies for its SOS customers and how to manage long-term power market price risks. We do not believe that even a doubling of the projected DSM or its elimination entirely would have a material impact on the evaluation of bids in the RFP. While we believe that the Company should implement all cost-effective DSM for all of its customers, we do not recommend that the State Agencies defer a decision on whether to direct Delmarva to sign a power purchase contract with one of the bidders pursuant to the RFP due to a concern regarding the potential direction or effectiveness of Delmarva's DSM initiative." P 16

"There are two risk issues involving retirements of generating units—(1) retirement of generating units on the Delmarva peninsula, with attendant reliability and economic impacts, and (2) retirement of generating units within PJM as a whole." p 24

"DSM and the proposed MAPP transmission line, whether they are implemented or not, would not appear to have a material impact on evaluation of the bids." P 3

• Will the current system of short-term power bids address risks to Delmvarva ratepayers?

"Delmarva's position is that the market will take care of these risks with little, if any, intervention by the Company or the State Agencies. However, as we understand it, EURCSA requires or suggests a substantial degree of responsibility for active recognition and management of these risks by Delmarva, at least on behalf of its Standard Offer Service customers." P 3

• Should price and price stability be the only "key issue" for the IRP and RFP?

"At the same time, environmental issues are critically important, both in terms of mitigating climate change, improving air quality and other impacts, as well as their impact on electricity prices." P 3

• Is on-shore wind an alternative in Delaware?

"ICF disclosed an error in classifying Delaware wind resources .... In correcting this error, ICF found that less wind resources (30 MW by 2016) would be developed in Delaware. … In all, we believe very little, if any, on-shore wind projects will be built in Delaware." P 26-27

• Can we buy long-term contracts for power (e.g. 20+ years)?

"One supplier that had substantial existing coal-fired generation was interested in a sale of 10 years or longer, although it would likely include price adders for CO2 allowance costs. …. Another supplier expressed a lack of any interest in a long-term sale. Several marketers, which were also owners of substantial MW of generation in the region, indicated that they expected prices to increase in future years and that they were not willing to sell forward at prices that did not reflect such perceived price appreciation." P 35

• Will the bid projects be built (wind or IGCC coal) without a PPA?

"if Bluewater is not awarded a PPA, it will likely not be built, at least in the foreseeable future." P 20

"The current regional market structure raises questions about the ability of these types of projects [wind, as well as large coal or nuclear] to obtain long-term contracts or to be built in the required scale in the absence of long-term contracts" p 21

"However, if this does not occur [existing PJM power policies causing long-term investments], the capital intensive projects included as "optimal" generation in ICF's modeling may not materialize, and the result will be energy prices that are significantly higher than presently forecast by DP&L." p 23

• The proposed wind (and coal) bids are said to cost more than "market" electricity prices. But could the projected "market" price be low, so that the existing wind bid might not actually cost any more at all?

"[There is a] potential for strong long-term upward shifts in the natural gas prices due to fundamental shifts in the related oil markets or if LNG is not successfully deployed to the extent projected." P 33

"we determined that all of the gas price scenarios (High, Reference, and Low) used in sensitivity tests for the IRP and RFP bid evaluations assumed the same crude oil price forecast consistent with that set forth at page 64 of the IRP Supporting Documentation--$54.11/bbl in 2016 (2005$). Current prices are approximately $66/bbl (2007$). We believe this assumption dampens the potential price levels that natural gas prices may reach if crude prices increase dramatically due to fundamental long-term supply shifts."

• Can contracts to buy out-of-state power lock in current prices for 25 years?

"Calls were also made to large wholesale energy marketers in the region regarding their interest in making a long-term power supply sale at fixed or firm pricing. Of those we talked to, the response was mixed. One supplier that had substantial existing coal-fired generation was interested in a sale of 10 years or longer, although it would likely include price adders for CO2 allowance costs. The supplier did not want to provide indicative pricing. Other suppliers expressed an interest in a sale of 10 years, but provided little additional information. Another supplier expressed a lack of any interest in a long-term

sale. Several marketers, which were also owners of substantial MW of generation in the region, indicated that they expected prices to increase in future years and that they were not willing to sell forward at prices that did not reflect such perceived price appreciation." P 35

"The basis between PJM Western Hub and the Delmarva Zone over the past three years has averaged $4.44/MWh (all hours)." P 35

• Why does the IC suggest buying wind power?

"wind and other renewable generation in PJM can serve as a fixed price hedge against high natural gas prices for a portion of Delmarva's portfolio. Long-term contracts with renewables in the region may also help hedge RPS obligations and cost impacts associated with future CO2 regulations." P 34

"One way to hedge energy price risk (other than congestion), carbon dioxide allowance cost risk, and RPS price risk associated with RSCI SOS is to purchase bundled energy and RECs from onshore regional wind projects." P 34